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Duplicate Seasons Report enclosed herewith.
3241 & 3241^a

Diag. Cont. No. 78-2

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: *Virginia*

DESCRIPTIVE REPORT.

Hyd Sheet No. *3241^a*

LOCALITY:

James River

1911

CHIEF OF PARTY:

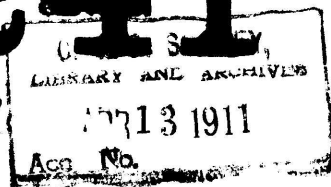
C. W. Ferguson

3241 3241a

3241 & 3241^a

DEPARTMENT OF COMMERCE AND LABOR,

COAST AND GEODETIC SURVEY.



O. H. TITTMANN, Superintendent.

Resurvey of the Chesapeake Bay, Virginia.

Revision of the James River.

Title sheet.

For Topographic & Hydrographic Sheet No. ^b1493^a,
with a small portion of 1495 overlapping.

between

Latitude [°]24' 00" to [°]37' 32' 00".

Longitude [°]77' 22' 30" to [°]77' 27' 00".

SCALE 1:10000.

From March 7th. to March 29th., 1911.

SCHOONER "MATCHLESS".

O. W. Ferguson, Assistant, C. & G. S., In Command.

OBSERVERS.

O. W. Ferguson, Assistant; James E. Marsh, Mate;

C. M. Cade, Assistant; Lewis S. Fuller, Aid;

John W. Clift, Chief Writer.

RECORDER.

H. W. Godsey, Writer 2d. Class.

LEADSMEN.

M. L. Taber, S. M. M.

A. C. Pinder, S. M. 3cl.

S. L. Jackson, Seaman.

TIDE OBSERVERS.

C. P. Holland, C. B. M.

S. L. Jackson, Sea.

E. A. Sahr, Matchless.
3241 & 3241^a

DEPARTMENT OF COMMERCE AND LABOR.

COAST AND GEODETIC SURVEY.

O. H. TITTMANN, Superintendent.

Resurvey of the Chesapeake Bay, Virginia.

Revision of the James River.

Descriptive Report.

For ~~Topographic~~ & Hydrographic Sheet No. ~~1493~~³²⁴¹, 3241^a
with a small portion of ~~1493~~ overlapping.

between

Latitude 37° 24' 00" to 37° 32' 00".

Longitude 77° 22' 30" to 77° 27' 00".

SCALE 1:10000.

From March 7th. to March 29th., 1911.

SCHOONER "MATCHLESS".

O. W. Ferguson, Assistant, C. & G. S., In Command.

OBSERVERS.

O. W. Ferguson, Assistant; James E. Marsh, Mate;

C. M. Cade; Assistant; Lewis S. Fuller, Aid;

John W. Clift, Chief Writer.

RECORDER.

H. W. Gedsay, Writer 2d. class.

LEADSMEN.

M. L. Tabor, S. M. M.

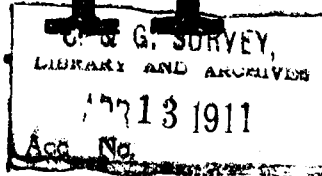
A. C. Pinder, Q. M. 3cl.

S. L. Jackson, Seaman.

TIDE OBSERVERS.

C. P. Holland, C. B. M.

S. L. Jackson, Sea.



H. 3241.

Tracing cloth sheet. The signals were presumably based in plan table positions and the tracing made of the topographic sheet after which the hydrography was plotted on the tracing. ^{Sheet examined in D.} Appears of Hyd'y & Top'y. satisfactory.

Desc.Rept.~~1493~~ & Hydg. Sheet ~~1493~~ with a small portion of 3241^a_B
~~1493~~ overlapping.

CONTROL.

The control of this sheet is furnished by the old and new topography supplemented by a system of Sextant Triangulation, wherever needed.

The old triangulation stations have been looked for and in most every case shown to be gone. It seems that some of the markings must have been feeble and in many places they have been destroyed. Stations Rocketts and Williams appear now to be under buildings. In Richmond we find old Δ stations Trinity Sh. Spire, corner 20th. & Broad Sts.; St. Johns Ch. Spire, on Broad St.; Capitol Flagstaff, on East end; Grace St. Presbyterian Ch. and Richmond Baptist College Tower are still in existence.

The Declination of the Needle is very closely 3° 30' W.^o

Sheet 1493^b extends from the Graveyard Reach to the Lower Rocketts, two miles below Mayos Bridge.

Sheet 1493^a (only a remnant) extends from Lower Rocketts to Mayos Bridge, of Richmond, Va.

The Printed Chart 401^e shows Richmond and the river, through town, 1 1/2 miles above Mayos Bridge, but I have not seen the original sheet for this work and Mayos Bridge was made the end of this revision work as the shores above are rocky and stable.

The width of this portion of the river has narrowed somewhat; being now from 260 to 135 metres in width and is diked all the way.

3. b
Desc.Rept.Topg.& Hydg.Sheet 1493 with a small portion of
a
1493 overlapping.

SHORES.

The country is undulating and shores generally low, from a few feet to ten, excepting at a few places as Drewerys & Chaffins bluffs where a height of 80 feet is reached. The shores are mostly covered with timber, Cypress, pine and sycamore but cultivated behind this.

The shores are generally muddy, some gravel in places, some rock along Drewerys Bluff. Some rock is used in building the dikes. In places where the sand pumped is somewhat quick another dike is extended parallel with the river.

BOTTOM.

The Bottom is generally soft but in the shoaler places rocky.

CHANNEL.

A depth of 12 feet can be carried over these sheets to the Head of Navigation. The shores are generally diked, making a depository for much sediment and causing a narrowing of the river.

There is no safe room for anchorage until Richmond is reached, where ships tie up at the wharves and small boats find room for anchorage.

The depth of the channel over this sheet has deepened about four feet, compared to the published charts, as a result of diking and dredging.

CREEKS.

Falling Creek above Drewerys Bluff is a creek of very little importance furnishing a harbor for small boats only.

Desc.^a Rept. Topg. & Hydg. Sheet 1493 with a small portion of
1493 overlapping.

CREEKS.

There are many other small creeks serving only as drainage ways.

LANDINGS.

There is a landing at Falling Creek for small boats and Club House accommodations.

A stone quarry landing two miles below Richmond, and through the City of Richmond, a large and important place of about 125,000, there is a large extent of wharfage.

OCCUPATION.

These sheets are thinly inhabited, all being farming country until Richmond is reached.

PRODUCTS.

The products are wheat, corn, oats, poultry and stock, excepting in Richmond where there is extensive manufacturing of various kinds.

NAVIGATION.

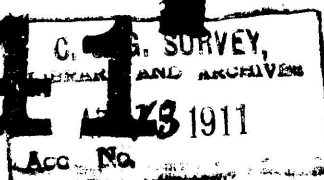
The line of navigation is quite obvious, the river being canal like and less than 200m. wide, with channel about in middle of the ~~Stream~~. Some dikes carry lights at bends; the upper half of the river is quite straight.

Farther contours and topography should be supplied to this sheet from the old charts; the contours farther back being the same and the topography not greatly changed.

5

Statistics with sheet

3241 & 3241

STATISTICS Sheet No. 1493^b.

DATE 1911	Letter	Vol.	Positions	Soundings	Miles Statute	Vessels.
March 7	a	1	39	174	2.4	Whaleboat
10	b	1	71	292	3.8	"
11	a	1	38	308	8.1	Steam Launch
21	c	1	90	524	6.8	Whaleboat
Total	4	1	238	1298	21.1	

List of objects located on Topographic &
Hydrographic sheets # 1493 b & a.

U. S. BENCH MARK STONES.

	Latitude	D.M.	Longitude	D.P.
At Jam	37 25	704	77 24	651
At Lip	37 25	818	77 25	841
314m. above Lip	37 25	1153	77 25	977

POST LIGHTS.

Grave	37 24	512	77 23	1037
Glim	37 25	922	77 24	231
Falling	37 26	286	77 25	1002
Good	37 29	682	77 25	470
Altro	37 29	1727	77 25	620

LAND MARKS.

WINDMILL 300m. back from Hen	37 24	1311	77 23	697
FLAG POLE On Club House at Falling	37 26	297	77 25	1065
WINDMILL 170m. from shore bet. Met & Mole	37 26	531	77 25	504
CUPOLA On house 470m. back from War	37 27	745	77 24	1127
(1) POWER HOUSE STACK (Brick on New Station)	37 31	162	77 24	1430
(2) SOLDIERS & SAILORS MONUMENT	37 31	1116	77 25	100

122, Elev of top given on topog. sheet - of Vickers. 0. m. y.

OLD TRIANGULATION POINTS AND GEODETIC POSITIONS, RICHMOND.

CHIMNEY (On Mayos old Brick Ho. on river)	37 30	1035	77 24	1324
TRINITY CHURCH SPIRE (20th. & Broad Streets)				
ST. JOHNS CHURCH SPIRE (On Broad Street)				
CAPITOL FLAGSTAFF (On East end of top of roof)				
GRACE ST. PRESBYTERIAN CHURCH TOWER				
RICHMOND BAPTIST COLLEGE TOWER				

The sheet of Geog. Particulars containing
these 4's & 2's has been missing
since Mr. C. M. Lead had it -
in the field while searching for
stations; but quantities could be filled
in from office records. C. M. F.

C. & G. SURVEY,
LIBRARY AND ARCHIVES

APR 13 1911

Acc. No.

The names of all Sextant Triangulation signals are
plainly written on the sheets.

2

3241

&

3241

1

POST-OFFICE ADDRESS: YORKTOWN, VA.

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

Department of Commerce and Labor

COAST AND GEODETIC SURVEY

SCHOONER "MATCHLESS",

YORKTOWN, VA., APRIL 12, 1911.

COAST AND GEODETIC SURVEY
APR 14 1911
RECEIVED 10:10

Mr. O. H. Tittmann,
Superintendent, C. & G. Survey,
Washington, D. C.

Sir:-

I have the honor to make the following seasons report at the completion of the revision Survey of the James River, Virginia, ordered in your instructions of June 18th., June 23d. and September 23d. of 1910.

On July 15th. at Newport News, having completed the office work of York Spit Shoal I sailed to Fergussons wharf and on the 16th. began the supplementary work ordered in instructions of June 23d. on sheets 3045 and 3045a, extending from Newport News to Mulberry Point. Completed sheets 3045 and 3045^a and sailed to Glaremont, Va. on July 24th.

From this point I completed the supplementary work ordered in your instructions of June 23d. on sheet 3097. This sheet extended from Mulberry point to Barrets Point, just below the Chickahominy River where the triangulation done by Captain J. B. Boutelle terminated on Δ stations Chickahominy 1910 and Dillard 1910.

2.
Seasons Report of the Revision survey of the James River,
Virginia. O.W.F. April 12, 1911.

TRIANGULATION.

The triangulation was continued from the known line Chickahominy and Dillard to Bermuda Hundred, Virginia, through 58 stations.

All stations were sketched and described in the record books and in two books used for the duplicate descriptions where all stations and descriptions are brought together and indexed. All of these stations excepting a few in the water, made necessary for carrying the work forward, were permanently marked by a tile set in cement, with bell end down, and an 18 inch iron pipe 2 inches in diameter set within the tile and all filled with cement.

From the upper limits of this triangulation to Richmond the river becomes quite narrow, from 300m. to 135m. in width and is generally quite crooked. The old topographical points supplemented by new topography and a system of sextant triangulation of 145 stations furnished ample control of this portion.

Faithful search was made for the old triangulation points, however, but few were found. \triangle Spencer '71 was found marked by a long slim Cedar stake, which I replaced with a tile and iron pipe. \triangle s Spencer '71 and Palmer '71 were very approximately recovered but the exact mark could not be found. Jordan Point Light House tower, '75 was connected with and is taken to be, as the best information shows, the same as 1875.

I joined on to an old granite stone at Brandon near \triangle Brandon 1910 which I believe to be an old triangulation station.

Seasons Report of the Revision Survey of the James River,
Virginia. O.W.F. April 12, 1911.

TRIANGULATION (Continued).

A similar one in the middle of the road at Δ Point
1910.

One on the top edge of bank below Sturgeon Brick Yard,
" " " " " " at Old Dunmore Landing,
" " " " " " near old station Court House
Creek '71.

One on top edge of bank 1/4 mile below City Point.

All of these were apparently located for triangulation
stations but we have no data for their positions.

Besides the above. There were found 39 granite monuments
of about the same appearance - posts 2 1/2 feet long, 5 1/2
x 5 1/2 inches on top and dressed down to 5 inches below top,
all around, with a 1/2 inch hole drilled for the center.
These were set near the high water line and frequently out-
side of high water so that the tops of many were submerged at
high water. Some of these were known to be U.S.F.B.M. stones

as B. M. Sandy	37 ⁰	14' 492m.	76 ⁰	56' 584m.
" " Black	37	15 1325	76	58 397
" " Range				
" " Sue				
" " Jordan				
" " Major				
" " Shirley				

" " Picketts, but the others I had no record of, but the
computed or scaled latitudes and longitudes of all are given
in the lists of positions for the respective sheets. I made

Seasons Report of the Revision Survey of the James River,
Virginia. O.W.F. April 12, 1911.

TRIANGULATION (Continued).

a trip to Richmond in January to see U.S. Assistant Engineer, Samuel H. Yonge, to get a record of these 39 stones and found that they were set as "transit stones" and lines observed and coordinates computed for a system of rectangular lines on enlarged sheets of the river on scales of 100 and 200 feet to 1 inch.

In Richmond, Va., there are remaining intact \triangle "Chimney of Mayos Old Brick House",

Trinity Church Spire, corner 20th. and Broad Streets,
St. Johns " " , on Broad Street,
Capitol Flagstaff, on East end of top of roof,
Grace Street Presbyterian Church Tower, and
Richmond Baptist College Tower.

THE APPOMATTOX RIVER.

The work of Topography and Hydrography on the Appomattox River ordered under date of September 23d., 1910 were completed and all reported upon under date of December 13th., 1910.

At the same time the petition from parties in Petersburg, Va., interested in the navigation of the Appomattox, asking for two lights on the river near its confluence with the James, was forwarded to you with locations, soundings and notes. The result of this petition was that one light was secured for the upper point at the confluence with the James but the light opposite Buzzards Island was refused.

Seasons Report of the Revision survey of the James River,
Virginia. O.W.F. April 12, 1911.

CURRENTS.

Currents were observed at every anchorage, Newport News, Fergussons Wharf, Claremont, Willcox Wharf, City Point, at the confluence with the Appomattox, Meadowville and Richmond. Generally two days of currents were observed about 14 days apart.

DECLINATION OF THE MAGNETIC NEEDLE.

The Declination of the Magnetic Needle was determined at four Stations,

△ Sandy Point,
Willcox Wharf,
City Point, and
Eppes Island.

TOPOGRAPHY.

The shore line topography was revised over the whole length of the Survey, giving attention to new names and places and change of names as well as changes in the topography. The topography and contours farther back are sufficiently shown on the original sheets and no changes were made in these features unless known to be in error.

The topography and contours of the river front in Richmond were taken for a good width from shore line and the heights of bluffs in sight taken, also height of top of Confederate Soldiers Monument and top of Brick stack of new power house on river bank in Fulton (formerly the Rocketts). The adopted new wharf line was also shown on the sheet. The City, farther back, is quite completely shown on the printed chart, also the permanent topography above Hayes Bridge.

Seasons Report of the Revision Survey of the James River,
Virginia. O.W.F. April 12, 1911.

HYDROGRAPHY.

The hydrographical work thoroughly covered the area in question, all bars and channels being well located and developed.

A large amount of sediment is carried into this river by the small and large confluent streams, and a large amount comes down the upper river and passes Richmond into the navigable channel, yet the diking and dredging done by the U. S. Engineers has maintained the former effective depths very nearly and greatly improved some portions. There are two features of the improvement, (1) dredging and (2) diking and sometimes both. The diking is quite extensive. There is a stretch of dikes 1 1/2 miles in extent averaging five miles below Meadowville. The diking begins again 1 1/2 miles below Meadowville and continues to Dutch Gap where General Butler during the civil war cut across a pear shaped point, shortening the distance to Richmond, for all time, by about 5 miles.

About four miles above Dutch Gap the dikes begin again and extend a mile. Then there is a two mile stretch with no dikes, but they begin again at the upper part of Drewrys Bluff and continue to Richmond. They have produced a deepening of the channel of about 4 feet from Richmond to a few miles below; in many places large quantities of rock has been blasted and dredged out of the channel.

The Dutch Gap is now, more than twice the width shown on the printed chart, and the cut-off-bend around Farrars Island has largely filled up by deposits from mud scows and sediment.

Seasons Report of the Revision survey of the James River,
Virginia. O.W.F. April 12,1911.

I have been assisted on this work by

(1) James E. Marsh, Mate, all of the time with the exception of 45 days of sick and annual leave.

Mr. J. George Dobie, Deck Officer June 1st. to 22d.

and Aid June 23d. to September 10th. excepting eight days of annual leave.

Charles A. Mourhess, Deck Officer from July 2d. to July 14th. and Aid July 15th. to Jan. 23d. excepting 20 days of annual leave.

James A. Smith, Aid, January 8th. to March 8th.

Lewis S. Fuller, Aid, March 8th. to the end of season.

John W. Clift, Chief Writer, and four other petty officers and W. W. Bray, Engineer of the Launch and 5 or 6 seamen.

I have kept the office work, (which usually has a strong proclivity to be behind) pretty well up with the field work, and have forwarded to the office the completed pieces as finished from time to time with descriptive reports, lists of positions, and field work and all data pertaining to them.

Reported the completion of work on sheets and forwarded all records pertaining thereto as follows:

August 3d., 1910, sheets 3045 and 3045^a Hydrography,
August 25th., 1910, " 3097, " ,
September 24, 1910, " 1391^a Topography & " ,
December 7, 1910, " 1391^b lower half York & Hydy.,
" 13, 1910, " Appomattox River " " " ,
" 13, 1910, also a petition from citizens of Petersburg, Va. for two lights on the Appomattox with map of explana-

Seasons Report of the Revision Survey of the James River,
Virginia. O.W.F. April 12, 1911.

nations and endorsement.

January 27, 1911, upper half of sheet 1391^b Topy. & Hydy.,

" 27, 1911, a progress sketch of triangulation, 6
record books, 2 books of descriptions and all lists of
computations.

March 3, 1911, sheets 1438 and 1439 Topy. & Hydy.,

April 12, 1911, " 1493^b " 1493^a " " " ,

" 12, 1911, The book of Current Observations for all
stations observed.

The observations and reductions for the Declination of
the Magnetic Needle at Sandy Point opposite Claremont were
forwarded August 29, 1910. And for Willcox Wharf, City Point
and Eppes Island on March 16, 1911.

The Cahiers (2) of Geographic Positions, Descriptions
and sketches furnished by the office for this survey are
returned herewith with notes.

CLAREMONT GAUGE.

A gauge was established at Claremont, Va., and all highs
and lows taken from evening of July 22d., 1910 for nearly two
months, while the Matchless was near there. The highs and
lows that occurred during the daylight time, were continued
right on until the 31st. of March 1911 when the work was
closed.

Accompanying this report is a statistical report, and a
list of landings.

Respectfully submitted,

Assistant.

O. W. Ferguson.

LIST OF LANDINGS ON THE JAMES RIVER, VA., WITH DISTANCE
MEASURED ON THE AXIS OF THE CHANNEL FROM NEWPORT
NEWS OFF OLD DOMINION WHARF TO OLD DOMINION
WHARF AT RICHMOND.

WHARF NAME	BANK	STATUTE MILES
Rocks Wharf	Right	11.5
Fergussons Wharf	"	14.0
Abandoned Wharf	"	15.7
Homewood Wharf	"	23.5
Kings Mill "	Left	25.7
Scotland "	Right	29.5
Cobham "	"	31.1
Jamestown Island Wharf	Left	32.1
Dillard's Wharf	Right	37.4
Claremont "	"	42.3
Sandy Point Wharf	Left	42.7
Private Wharf	"	42.9
Old Claremont "	"	43.7
Brandon	Right	45.0
Clarks Landing	Left	46.0
Ritchies	Right	46.1
Trees Point	Left	46.3
Redwood	"	47.1
Oldfield	"	47.5
Wilson	"	48.2
Sturgeon Point	"	48.7
Tylers Landing	"	49.4
Upper Brandon (Abandoned)	Right	50.2
Stanley	"	52.0

LIST OF LANDINGS ON THE JAMES RIVER, VA., WITH DISTANCE
 MEASURED ON THE AXIS OF THE CHANNEL FROM NEWPORT
 NEWS OFF OLD DOMINION WHARF TO OLD DOMINION W
 WHARF AT RICHMOND.

WHARF NAME	BANK	STATUTE MILES.
Wood Landing at Fort Powhatan	Right	53.4
Weyanoke Stock Farm; and Weyanoke	Left	55.2
Willcox	"	57.2
Buckland	"	57.3
Old Swynards	"	57.6
Abandoned Wharf at Flowerdew Hundred	Right	58.3
Blairs	"	59.2
Maycox Wharf	"	60.0
Ramseys Boat Landing	Left	60.0
Westover	"	61.0
Coggins Landing	Right	60.8
Harrisons " (Abandoned)	Left	61.8
Wood Landing	"	63.3
Wood "	"	64.2
City point	Right	67.8
Bermuda Hundred (Wood Landing)	"	69.7
Shirley	Left	70.3
Hardings	"	72.2
Wood Wharf (Abandoned)	"	72.5
Picketts	"	73.7

LIST OF LANDINGS ON THE JAMES RIVER, VA., WITH DISTANCES
 MEASURED ON THE AXIS OF THE CHANNEL FROM NEWPORT
 NEWS OFF OLD DOMINION WHARF TO OLD DOMINION
 WHARF AT RICHMOND.

WHARF NAME	BANK	STATUTE MILES.
Presque Isle	Right	75.7
Old Mill Wharf	"	76.6
Old Curls Landing	Left	79.2
Curls Neck	"	80.2
Tillmans Landing	"	80.7
Meadowville	Right	83.8
Varina	Left	84.6
Dutch Gap	"	85.9
Cox Wharf	"	86.6
Landing in Farrars Reach	Right	87.2
Old Landing	"	90.2
Club House Wharf	"	93.7
Old Quarry Landing	"	98.0
Old Dominion Wharf(Richmond)	Left	100.0

Mayes Bridge		101.0

VEC
May 10, 1911.

HYDROGRAPHIC SHEETS 3241 & 3241a.

84 E d w
AB
7/11

James River, Virginia, Kingsland Creek to Richmond,
by Asst. O. W. Ferguson in 1911.

TIDES.

	Club House Dyke Falling Creek ft.	Richmond ft.
Mean low water, or plane of reference on staff	2.2	1.4
Lowest tide observed " "	0.8	-2.0
Highest " " " "	6.4	30.0
Mean range of tide	3.6	3.7

Coast and Geodetic Survey
MAY 11 1911
TIDAL DIVISION

Hyd Sheet No 3241 & 3241^a May 15 1911

See report with Hyd Sheet No 3226.

H.L.S.

Hyd Sheets Nos 3226, 3227, 3219, 3241 + 3241² May 15 1911

The survey shown on these sheets extends from City Pt to Richmond. While it is not a close development it is sufficient to show the change that has taken place and the depth that can now be carried through the channel.

There has been a deepening in the channel at several places so that 18 feet can now be carried over the whole length of this part of the river.

The field work was evidently very carefully done as there are but few crossings where the soundings do not agree perfectly.

The records were kept in a satisfactory manner.

J. H. Simmons